

IN THE CLAIMS:

Please amend claims 1 and 4 and add claim 22, as shown in the following listing of claims, which will replace all prior versions and listings of claims in the application.

Listing of claims:

1 (currently amended). A method to prepare an isolated nucleic acid fusion molecule having a nucleotide sequence encoding at least one of each of the variable regions of the α and β chains of a non-human T-cell receptor (TCR) which TCR is specific for a tumor-associated antigen (TAA) and for HLA restriction, which method comprises

a. immunizing a transgenic non-human mammal species, which produces human HLA, with an effective amount of said TAA to produce HLA restricted cytotoxic T lymphocytes (CTL) which display TCR specific for said TAA in amounts sufficient to lyse tumor cells having the TAA;

b. recovering said HLA restricted CTL, which contain said a nucleic acid molecules encoding at least one of each of the variable regions of the α and β chains of a non-human TCR, molecule comprising a nucleic acid sequence of a variable region of the α chain of the TCR and a nucleic acid sequence of a variable region of the β chain of the TCR;

c. cloning or amplifying said nucleic acid molecule encoding comprising nucleotide sequence isolated from the HLA restricted CTL, and encoding a variable region of the α chain of the TCR and a variable region of the β chain of the TCR to provide TCR receptor-encoding nucleic acid molecules comprising at least one nucleic acid molecule, which comprises a sequence encoding a variable TCR α chain protein, and at least one nucleic acid molecule, which comprises a sequence encoding a variable TCR β chain protein;

d. recovering said TCR receptor-encoding nucleic acid molecules; and

e. fusing the recovered TCR receptor-encoding nucleic acid molecules together to prepare the isolated fused nucleic acid molecule, wherein the fused nucleic acid molecules molecule comprises a sequence encode encoding a single-chain TCR comprising a fusion

protein, which comprises a variable region of the TCR α chain fused to a variable region of the TCR β chain and which is specific for TAA and for HLA restriction.

2 (previously amended). The method of claim 1 wherein said HLA antigen is A2.

3 (previously amended). The method of claim 1 wherein said mammal is a mouse.

4 (currently amended). The method of claim 3 wherein the cloning or amplifying step ~~further c~~ comprises a polymerase chain reaction using primers derived from murine TCR.

5 (previously amended). The method of claim 4 wherein said primers are set forth in Figure 6 (SEQ ID NOS: 3-42).

6-21 (canceled).

22 (new). The method of claim 1, wherein the variable region of the TCR α chain of step e comprises a functional variable region of the TCR α chain and the variable region of the TCR β chain of step e comprises a functional variable region of the TCR β chain.